UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,175	09/12/2003	Clarence E. Thomas	068062.0168	7513

31625 7590 06/13/2008

BAKER BOTTS L.L.P.
PATENT DEPARTMENT
98 SAN JACINTO BLVD., SUITE 1500
AUSTIN, TX 78701-4039

EXAMINER	
LEE, HWA S	

ART UNIT	PAPER NUMBER
2886	

MAIL DATE	DELIVERY MODE
06/13/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/661,175	THOMAS ET AL.	
	Examiner	Art Unit	
	Hwa S. Lee (Andrew)	2886	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 March 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8,10-12,33 and 34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,10-12,33 and 34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1/28/08*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-8, 10-12, 33, and 34, are rejected under 35 U.S.C. 103(a) as being unpatentable over Medford et al (US 6,608,717).

For claims 1 and 8, Medford et al (Medford hereinafter) show a optical coherence microscope apparatus and method comprising:

an illumination lens (lens near the reference mirror) operable to focus a reference beam;

a beam splitter (2x2 coupler) optically coupled to the illumination lens by the reference beam; and

a reference mirror (1-D scanning mirror) located at a waist of the reference beam and oriented relative to the beam splitter and illumination lens such that the reference beam is reflected from the reference mirror to the beam splitter.

Although Medford may not expressly state the functional use of the elements, such as the use of word "operable", a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably

distinguish the claimed invention from the prior art. As presently claimed, there is no structural difference.

With regards to the limitation "to eliminate the need for a reference objective on a reference arm," that limitation does not further define the structure of the holography system . In addition the intention of using a reference mirror to eliminate the need for a reference objective does not further define the structure of the system. Medford shows a structure of an illumination lens, a beam splitter, and a reference mirror located at a waist of the reference beam and oriented relative to the beam splitter and the illuminating lens such that the reference beam is reflected from the reference mirror to the lens and then to the beam splitter.

With regards to the method claim 8, "eliminating the need for..." only states the achievement of the invention which is not a method step. Therefore, there is no difference to the steps of claim 8 which is drawn to a method. Medford shows the step of focusing a reference beam with an illumination lens, the step of transmitting at least a portion of the reference beam though a beam splitter, and the step of reflecting the portion of the reference beam.

With regards to claim 2, Medford shows the apparatus configured with optical fibers and does not expressly show the use of a cube beam splitter. Official Notice is taken that cube beam splitters are well known in the art and at the time of the invention one of ordinary skill in the art would have used a cube beam splitter since it is well known to arrange interferometers in either an optical fiber arrangement or a bulk optical element arrangement. Since a cube beam splitter is a well known bulk optical element for splitting a beam, the skilled artisan would have used a cube beamsplitter in the bulk optical arrangement.

With respect to claim 3, Official Notice is taken than the use of quarter wave plates in an arm of an interferometer is well know. Interferometers utilizing polarized light is advantageous for improving signal quality by improving the difference between the measurement and reference beams, and the use of a quarter wave plate is known so that the reference beam will match the measurement beam. A half wave shift is required to interfere and by using a quarterwave plate the reference beam having gone through the quarterwave plate twice (once to the reference mirror, and once returning from the reference mirror) will under a half wave shift such that the polarization matches the measurement beam.

.

With respect to claims 4 and 12, the beams are Gaussian (column 7, lines 12+).

With regards to claim 5, Medford shows the reference mirror comprises a flat mirror (e.g. see Figure 10).

With regards to claims 6 and 11, Medford shows the reference mirror operable to maintain optical symmetry of a reference arm and a target arm (column 7, line 39).

With regards to claims 7 and 10, the reference mirror would be inherently operable to form a first wavefront substantially similar to a second wavefront formed by the reference objective.

With respect to claim 33, the claim does not further limit claim 8 drawn to a method by reciting a step or manipulatively further defining a previously recited step. The claim merely recites a capability ("operable to") of the reference mirror, and thus Medford meets the limitation of claim 33.

With respect to claim 34, the claim does not further limit claim 8, which is drawn to a method, by reciting a step or manipulatively further defining a previously recited step. The claim merely recites the structure of the reference mirror, and thus Medford meets the limitation of claim 34.

Response to Arguments

3. In response to Applicant argument that Medford fails to show, "a reference mirror located at a waist of the reference beam and oriented relative to the beam splitter and illumination lens such that the reference beam is reflected from the reference mirror to the beam splitter in order to eliminate the need for a reference objective on a reference arm," Claim 1 is drawn *structure* and the recitation, "in order to eliminate the need for a reference objective on a reference arm" does not define what the structure of the invention is, but rather is a recitation of what the achievement of the invention is. Similarly, claim 8 is drawn to a *method* and the recitation, "the reference mirror eliminating the need for a reference objected on a reference arm" is not a method step, but rather is a narrative recitation of what the achievement of the invention is.

As discussed above, Medford shows, "a reference mirror located at a waist of the reference beam and oriented relative to the beam splitter and illumination lens such that the

reference beam is reflected from the reference mirror to the beam splitter." Medford shows that the reference mirror is located at the waist of a lens ("aspheric collimating lens"). The reference mirror is also oriented so that the beam is reflected back to the lens and then to the beam splitter. Thus the structure and method shown by Medford meets the structure and method steps claimed. Medford does not need to show "in order to eliminate the need for a reference objective on a reference arm" since the recitation does not recite what the structure is. Nor is the recitation a method step. does not have patentable weight

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Hwa S. Lee whose telephone number is 571-272-2419. The examiner can normally be reached on Tue-Fr.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tarifur R. Chowdhury can be reached on 571-272-2800. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hwa S. Lee (Andrew)/
Primary Examiner, Art Unit 2886